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Sources used to obtain information and their impact on the mothers' complementary feeding practices

Information sources in the complemtary feeding practices

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Abstract

Aim: When, how and which nutrients complementary food is given, how the baby adapts to this situation is important for the growth, development, psychosocial, motor and cognitive development of the infant during childhood. The aim of this study was to learn the methods of obtaining information from mothers about the complementary feeding period.

Material and Methods: Mothers who had 6-36 months old children applied to the Pediatric outpatient clinics between May 2019 and May 2020 were included in the study on a voluntary basis. The socio-demographic information of the mothers, information about babies and complementary food were asked through a survey, which consisted of 3 parts.

Results: One hundred forty mothers (65.7%) stated that they exclusively breastfed before complementary feeding. The most preferred method was to obtain information by traditional methods (61.5%). Families get more information from pediatricians (54.1%) as professional support. When we look at 79 mothers who stated that they obtained information via websites, it was found that 9 out of 15 mothers (60%) had a master's/doctorate degree, 28 out of 64 mothers (43.8%) were university graduates, 21 of 62 mothers (33%) were high school graduates (p = 0.001).

Discussion: Though getting information about complementary feeding period from websites and social media may appeal to families due to fast and easy access, the presence of inaccurate or incomplete information, inability to control the information and lack of scientific basis will lead to misinformation and confusion.

Keywords

Complementary feeding; Complementary food; Infant nutrition; Parents information sources

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Introduction

The newborn baby is dependent on the mother for the continuity of life. In order to grow and develop in a healthy way, this continuity can only be achieved through successful nutrition based on mutual care and trust between mother and baby. The most important food for the healthy growth and development of babies is breast milk, which is special for each baby [1].

It is recommended to start complementary feeding from the 6-month period with the continuity of breastfeeding. Starting the complementary feeding period early, may decrease breast milk supply and cause breastfeeding to cease. With contributions of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), a program of baby-friendly hospitals has been initiated in 152 countries around the world to promote breast milk [2-3].

Starting complementary (solid) foods early or late may induce some problems such as diarrhea, food allergies, and obesity [4, 5]. It is known worldwide that over 40 million children under the age of 5 are considered overweight/obese. Studies on obesity in the literature have shown that starting complementary feeding before four months and high protein food intake in the early period increase obesity. Prolonged transition to complementary food intake can cause micronutrient deficiency and nutritional behavior problems [4, 6].

In this study, we aimed to investigate how and where mothers learned about complementary feeding.

Material and Methods

Sampling

This study included mothers of 216 children on a voluntary basis, who were admitted to the Aksaray University Education and Research Hospital pediatric outpatient clinics.

Data collection tools

In collecting data, questions about the sociodemographic characteristics of mothers, babies/children and complementary feeding period were asked through a survey, which consisted of 3 parts. Information about the mothers' sociodemographic characteristics was obtained using 1-5 questions in the first part. In these questions, the mothers were asked about their age, education level, monthly income level of the family, employment status and the region where they live.

In the second part of the survey (questions 6-10), mothers were asked about their babies. The mother was asked whether the birth was by cesarean section or normal birth, where and in what environment the delivery took place, the gender of the baby and the birth weight of the baby. The birth weight of babies was <2500g. 2500-4000 g. and> 4000 g. Before the complementary food, the nutrition status of the babies was questioned, and the questions were asked with 3 answers: exclusively breastfed, only formula and breast milk + formula.

In the third part, questions about the complementary feeding period were asked; complementary food start time as <4 months, 4-6 months, 6-8 months,> 8 months; The number of examinations performed by the pediatrician and whether she received information from the pediatrician or family physician during the examination were asked. The mothers were asked in which environment and under what conditions the additional food was given. In addition, whether there was a history of forced feeding in cases where the baby refused to eat was asked.

They were asked whether the mothers received support during the complementary food period, and if so, from whom. In addition, it was asked where and how the mothers obtained information on complementary food. In this context, an 8-answer multiple-choice question was asked (traditional ways of obtaining information, from a pediatrician, family physician, dietician, television programs, social media accounts, nutrition books and the internet).

Collection of data

Data were collected during the May 2019- 2020 period. Before the data was collected, detailed information was given to the families about the study and their written consent was obtained. Mothers who had a child aged between 6 and 36 months who applied to Pediatrics outpatient clinics between May 2019 and 2020 were included in the study on a voluntary basis.

Families of infants/children with refugee status, who do not have children under the age of 3, who cannot clearly remember the complementary food period, were not included in the study. Refugee babies/children were excluded from the study due to the lack of clear understanding with their families and the thought that reliable data could not be collected due to the traumatic events they experienced and their current conditions.

Ethics

After the necessary explanations and procedures related to the research were explained to the participants, written informed consent was obtained from all participants after the study procedures had been fully explained. This study has been carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki). This survey was approved by ethical committee of Aksaray University (Number: 2020 / 01-12). The participants were assured that their participation was voluntary and that anonymity, privacy, and confidentiality of the data were guaranteed. Furthermore, they were informed about the purpose and the method of the study before signing a written informed consent.

Statistical analysis

In our study, mean, standard deviation, minimum and maximum values are given in descriptive statistics regarding continuous data, and percentages are given in discrete data. The Shapiro-Wilk test was used to examine the compatibility of continuous data with a normal distribution. Multiple response sets are used in multiple choice questions. Pearson's correlation coefficient was used to examine the relationship between the data obtained by measurement. The Chi-square test was used in group comparisons (cross tables) of nominal variables. IBM SPSS Statistics (Statistical Package for the Social Sciences version 22, Chicago, IL, USA) program was used in the evaluations, and $p < 0.05$ was accepted the statistical significance limit.

Results

Forty-eight (22.2%) of the 216 mothers participating in the study were <25 years old; 83 mothers were (38.4%) 25-29 years old, 46 mothers (21.3%) were 30-34 years old, 36 mothers (16.7%) were 35-40 years old and 3 mothers (1.4%) were> 40 years old. While 61.6% (n = 133) of the mothers who participated in the study lived in cities, 38.4% (n = 83) lived in

Table 1. The relationship between parent's educational status and Complementary Feeding Features.

			Starting times of complementary feeding				Feeding before the complementary period			p1	p2
			<4 months	4-6 months	6-8 months	>8 months	Breast milk	Formula	Breast millk+formula		
Educational Status	Not Educated (N=7)	% within educational status	1 (14.3%)	5 (71.4%)	1 (14.3%)	0 (0%)	4 (57.1%)	1 (14.3%)	2 (28.6%)		
	Primary School (N=17)	% within educational status	3 (17.6%)	8 (47.1%)	5 (29.4%)	1 (5.9%)	8 (47.1%)	4 (23.5%)	5 (29.4%)		
	Secondary School (N=51)	% within educational status	5 (8%)	26 (51.0%)	16 (31.4%)	4 (7.8%)	25 (49%)	5 (9.8%)	21 (41.2%)		
	High School (N=62)	% within educational status	3 (4.8%)	24 (38.7%)	34 (54.8%)	1 (1.6%)	48 (77.4%)	2 (3.2%)	12 (19.4%)	p=0.022	p=0.017
	University (N=64)	% within educational status	1 (1.6%)	25 (39.1%)	38 (59.4%)	0 (0.0%)	47 (73.4%)	3 (4.7%)	14 (21.9%)		
	Masters/doctora Degree (N=15)	% within educational status	0 (0.0%)	7 (46.7%)	8 (53.3%)	0 (0.0%)	10 (66.7%)	0 (0.0%)	5 (33.3%)		
	Total	% within educational status	13 (6.0%)	95 (44.0%)	102 (47.2%)	6 (2.8%)	142 (65.7%)	15 (6.9%)	59 (27.3%)		

P1: educational status- starting times of complementary feding
P2: educational status- Feeding before the complementary period

Table 2. The effect of parents' education status on obtaining information for Complementary Feeding.

Information Sources	Educational Status						p
	Not educated N=7	Primary School N=17	Secondary School N=51	High School N=62	University N=64*	Master's / doctorate degree N=15	
Traditional Methods	6 (85.7%)	15 (88.2%)	29 (61.7%)	41 (68.3%)	34 (54.8%)	8 (53.8%)	0.001
From Pediatrician	3 (42.9%)	2 (11.8%)	16 (34%)	38 (63.8%)	49 (79%)	9 (60%)	
From Family Physician	3 (42.9%)	2 (11.8%)	8 (17%)	21 (35%)	10 (16.1%)	5 (33.3%)	
From Nutrition Books	0 (0%)	2 (11.8%)	9 (19.1%)	16 (26.7%)	31 (%50	10 (66.7%)	
From Television Programs	2 (28.6%)	3 (17.6%)	7 (14.9%)	7 (11.7%)	7 (11.3%)	2 (13.3%)	
Through Social media / popular accounts	1 (14.3%)	3 (17.6%)	8 (17%)	13 (21.7%)	14 (22.6%)	4 (26.7%)	
From Dieticians	0 (0%)	6 (35.3%)	14 (29.8%)	23 (38.3%)	25 (40.3%)	7 (46.7%)	
Via websites	1 (14.3%)	3 (17.6%)	13 (27.7%)	21 (35%)	31 (%50)	10 (66.7%)	

*2 persons did not answer questions.

rural areas. When the babies were examined in terms of their gender, it was found that 127 babies (58.8%) were female and 89 (41.2%) were male.

When the participants were asked about the form of feeding before complementary feeding period, 142 mothers (65.7%) stated that they exclusively breastfed their child, 59 mothers (27.3%) breastfed along with formula and the rest of them (6.9%) gave just only formula. Thirteen mothers (6%) started complementary feeding period of their child before 4 months, 95 (44%) of them at 4-6 months, 102 (47.2%) of them at 6-8 months and 6 (2.8%) mothers after 8 months. Considering the birth weights of the babies who were examined, it was determined that there were 50 babies (23.1%) with <2500 g, 144 babies (66.7%) with 2500-4000 g, and 22 babies (10.2%) with> 4000 g.

One of 7 mothers (14.3%) who stated that they had no education, 10 of 17 mothers (58.8%) who were primary school graduates, 22 of 51 (43.1%) mothers who were secondary school graduates, 13 of 62 (21%) mothers who were high school graduates, 14 out of 64 (21.9%) mothers who were university graduates, and 4 out of (26.7%) 15 mothers who had master's and doctorate degrees stated that they forced their babies to eat during the complementary feeding period (p=0.006). Comparing the educational status of mothers who exclusively breastfed before starting complementary food, we found that 10 mothers (66.7%) who had master's and doctorate degrees, 47 mothers (73.4%) who were university graduates, 48 (77.4%) mothers who were high school graduates, and 25 (49%) mothers who graduated from secondary school, exclusively breastfed their babies before the complementary feeding period (p = 0.017).

When we compared the education level of the mothers and time of starting complementary feeding of the babieswere, we stated that 4 babies of mothers (71.4%) who did not have education started in the 4-6 month period, and 1 (14.3%) in the 6-8 month period; 8 babies of mothers (47.1%) who graduated from primary school were started complementary feeding in the 4-6 month period, 5 of them (29.4%) in the 6-8 month period; 64 babies of mothers who graduated from university, 25 (39.1%) of them started in the 4-6 month period, 38 (59.4%) of them started in the 6-8 month period, and 7 babies of mothers (46.7%) who received doctorate degree started in 4-6 months and rest of them (53.3%) started in 6-8 month period (p = 0.022) (Table 1).

One hundred thirty-three (61.5%) mothers obtained information about complementary feeding period using traditional methods, 117 (54.1%) received information from pediatricians, 49 (22.6%) from family physicians, 43 (19.9%) through social media/popular accounts, 68 (31.4%) through nutrition books, 79 of mothers (36.5%) stated that they got information via websites (Figure 1).

Among 133 mothers who obtained information through

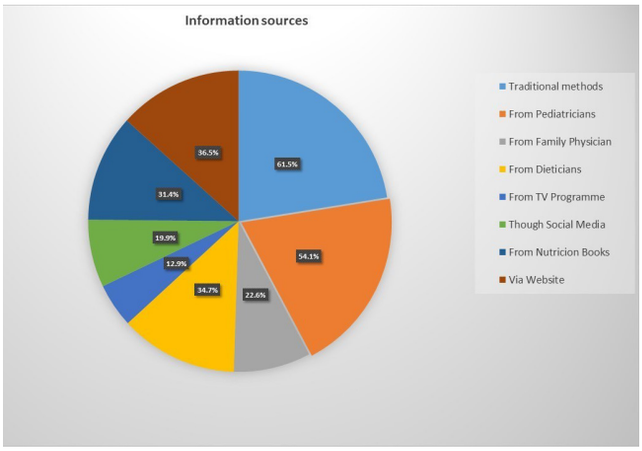

Figure 1. Information sources

traditional methods, 6 (85.7%) mothers were not educated, 15 (88.2%) mothers were primary school graduates, 29 (61.7%) mothers were secondary school graduates, and 8 were master/doctoral graduates (53%). Considering 68 mothers who obtained information from nutrition books, it was found that 16 mothers (25.8%) were high school graduates, 31 mothers (48.4%) were university graduates, and 10 mothers (66.7%) were master's/doctoral graduates. When we look at 79 mothers who stated that they obtained information via websites, it was found that 9 mothers (60%) had master's/doctorate degree, 28 of 64 mothers (43.8%) graduated from university, and 21 mothers (33%) graduated from high school (p = 0.001) (Table 2).

Discussion

It is observed that 1.3 million babies in the world return from death to life every year with supplemental nutrients after exclusively breastfeeding for the first 6 months [2, 7]. According to the Turkey Demographic and Health Surveys in 2013, it was stated that 12% of infants received complementary food before the 6th month and were not commencing at the correct time. This situation shows that the transition to complementary food is still an important problem [7].

In the study by Sivri [8], it was determined that the rate of transition to complementary food in the 4-6 month period was 57.4%. In our study, 16 (7.4%) infants began to receive complementary food before 4 months, 93 (43.1%) between 4-6 months, 101 (46.8%) between 6-8 months, and 6 infants over 8 months (2.8%). The time of starting complementary food in infants and the educational status of the mothers (p = 0.22) and the number of living children they have (p = 0.322) were compared, and in both cases, it was found that there was no effect on the early complementary period.

In infants <6 months, the rate of breastfeeding is 16% in Afghanistan, 51% in China, 32% in East Asia and 30% in South Africa; In Turkey, this rate was found as 30.1% [9]. One of the most important results of our study is that the rate of exclusive breastfeeding before complementary period was found to be 65.7% (n=142). On the other hand, we found that 46.8% (n = 101) started complementary food intake in <6 months period. This result shows us that mothers exclusively breastfed their babies prior to complementary feeding period, but did not comply with the recommended commercing time of complementary food of 6 months. In line with the existing literature, we found similar results, according to which the amount of mother's breast milk was insufficient, and a child's first relationship with food tasting might be a factor affecting the initiation of complementary food [10,11].

Studies have shown that the level of education positively affects the duration of breastfeeding. In a study on 384 mothers from India, it was observed that the increase in the education level of the mothers positively affected the duration of breastfeeding [12]. In another study conducted in the United States of America (USA), it was shown that the increase in education level positively affects the increase in breastfeeding time [13]. In our study, we found similar results with the literature (p = 0.017).

In the relationship between mother and baby, good communication should be established in order to acquire the appropriate nutritional habits. Therefore, the mother should be aware of the hunger and satiety symptoms of the baby, and should feed on time and in the appropriate amount. This should encourage the baby's participation in the feeding activity. Since feeding time is also a time of love and learning, babies should be fed patiently and with pleasure, without verbal and physical pressure by making eye contact, encouraging them. In case of refusal of food, it is necessary to try again by spreading over time without being excessive [14-15]. While the rate of forced feeding was 58.8% in mothers who graduated from primary school, it was found to be significantly lower in university and doctorate groups which had higher education levels (21.9%, 26.7% respectively) (p= 0.006). From this result, we concluded that education is a prominent factor in forced feeding, which disrupts babies' nutritional patterns.

It is predicted that it can be a stressful period for parents and caregivers when their babies are introduced to complementary feeding experience. Therefore, it is not surprising that parents usually look for accurate feeding information along with professional support from health professionals [16]. Choice of snacks, healthy diet, initiation time, and fruit and vegetable preferences were the most sought parameters of the complementary feeding period by mothers. The most important knowledge that mothers eager to learn about complementary feeding regarding their babies is starting time of complementary food period and tasting period with new foods such as soups, fruits and vegetables. Mothers who want to get information about complementary feeding depend on not only on living social environment and cultural attitudes, but also living time conditions [16, 17]. In a study conducted in England [18], it was found that 33% of traditional methods called friends/family members in obtaining information about complementary feeding, 55% obtained information from websites, 55% from professional health professionals, 49% from books and other printed materials. Our results indicate that families get more information from Pediatricians (54.1%) as professional help. In addition, traditional methods were the most preferred method for obtaining informations (61.5%). The most important finding in our study was that the rate of obtaining information via the internet (36.5%) and social media (19.9%) was above our expectations. In the study by Garcia et al. [19], they indicated that the rate of obtaining information about complementary

feeding from websites has increased from 29 percent to 55 percent from 2010 to 2016.

The main factors using website/social media methods for families are the low level of knowledge and awareness of pediatricians and family physicians on complementary feeding, access to information expeditiously without wasting time [19, 20]. We found that in mothers who obtained from the websites the education level was higher (p = 0.001).

Limitations

Since the study is cross-sectional, the findings require careful interpretation in terms of cause-effect relationships. Due to the fact that the study was conducted with mothers who presented to the outpatient clinic, its results can hardly be generalized to the general population. There is a need for multi-center, larger population cohort studies on complementary feeding.

Conclusion

In conclusion, it is predicted that increasing internet usage will gain an important place in obtaining information on complementary nutrition in the future. Therefore, in order to reach accurate scientific information, it is necessary to present information on the internet at a professional level.

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Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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